

Smallholder farmers in mountain areas, who are weakly integrated in commodity markets and hardly able to compete with large-scale producers from lowlands, now have an entry point to capitalize on emerging markets for nutritious, healthy and organic products. These emerging markets offer windows of opportunity for developing pro-poor sustainable value chains, thanks to labelling and formal certification schemes that guarantee the value added of mountain products and help bring premium prices.

When it comes to market participation, smallholder mountain farmers are hampered by low, dispersed and unreliable production levels, remoteness, lack of processing technology and knowledge, and difficult access to market information, as well as inadequate negotiation and management skills. It remains difficult for them to make sufficient money to meet their basic needs, invest in their farm infrastructure and fulfil personal aspirations.

In order to adapt to their challenging environment, mountain farmers have developed highly diverse farming systems by integrating crop production with livestock, forestry and fishery, which may now turn their seeming disadvantage into a comparative advantage. They have respected cultural diversity, resisted homogenization of their products, domesticated crops and livestock, created and conserved agro-biodiversity and thereby developed in-depth local knowledge about usable wild species (Table 1).

They have also managed these integrated farming systems with low input of chemical fertilizers and pesticides – all of which adds up to the potential for producing attractive, healthy and organic food for new markets. Consumers, including mountain tourists, and the private sector are re-discovering the highly nutritious and medicinal value of indigenous, underutilized and wild species. They appreciate the qualities of organically grown or speciality products, and are willing to pay premium prices. At the same time, urbanization in some mountain areas offers markets for locally grown products.

Now, as a next step, it is necessary to develop value chains that enable family farmers and particularly poor households to participate in and benefit from these emerging markets. Such value chains need to be developed jointly by representatives from all stakeholder groups and based on a sound analysis of the mountain-specific challenges, natural resources and market potential as well as the farmers' socio-economic capacities and the relations among the value chain actors (1). Moreover, the development of a new value chain must not jeopardize the farmers' own food security and sustainable production systems (2, 3).

Mountain farmers would undoubtedly benefit from capacity building aimed at developing technical and managerial skills, promoted by both the public and private sectors. Collective action is key to overcome shortcomings of unreliable and low productions, and enhances the producers' negotiation power in the value chain. More direct links between producers, sellers and consumers will benefit farmers but will also reduce their vulnerability to exploitive practices of traders and middlemen. Moving ahead, appropriate technologies and infrastructure, such as decentralized and renewable energy supply, will be required to establish or enhance processing activities in mountain areas and, in turn, provide off-farm jobs. Producers and processors need to communicate the quality, uniqueness and origin of their products to the consumers in order to obtain higher prices that will cover the high labour input needed for maintaining ecosystem services provided by mountain areas (4). While the process of labelling and certifying products (Box) guarantees quality and traceability of mountain products, it also entails considerable communication and administrative efforts that can be beyond the ability of marginalized smallholder farmers – who then risk being excluded from promising markets or unable to take advantage of them. Therefore administrative requirements of formal certification schemes should be kept to a minimum without threatening the credibility of the scheme. Often labelling is sufficient for small production volumes that are meant for local and regional markets, while produce for national and global markets can garner a better cost-benefit ratio when formally certified.

Establishing niche markets under the prevailing liberal market regime in many countries requires enabling policies that acknowledge the added value of mountain products as a means to improve mountain livelihoods and regional development and at the same time compensate the higher labour input for maintaining critical ecosystem services.

Agro-biodiversity	Survey region	Record
4,000 varieties of native potatoes	Andean highlands of Peru, Bolivia, Ecuador	International Potato Centre (5)
1,299 species of medicinal plants	Gaoligonshan Nature Reserve, China	HKH* conservation portal, species data set of ICIMOD (6)
600–700 non-timber forest products (NTFP) (plant species only)	100 upland communities in Luang Prabang and Xien Khouang Province, Lao PDR	NTFP database of TABI** (7)
131 different livestock breeds	Turkey (nationwide)	FAO Domestic animal diversity information system (8)

Table 1: Selected examples illustrating the high agro-biodiversity in different mountain regions

## Sapsago: a branded mountain product for 550 years

In the fifteenth century, a blue fenugreek flavoured hard cheese known as sapsago was the biggest-selling product of Glarus, a Swiss mountain valley. Its main market at that time was the city of Zurich. In 1463, the people of Glarus established regulations for sapsago production, establishing it as a brand. The brand allowed them to distinguish their product from the cheeses of competitors, and to guarantee its quality and obtain a premium price. The branding was such a success that by the seventeenth century, it was necessary to limit export in order to secure sufficient supply for Glarus and to reduce speculation. Despite marketing crises over the centuries, sapsago remains an important export product, sold in more than 50 countries (9, 10).



<sup>\*</sup>HKH – Hindu Kush Himalayan; \*\*TABI – The Agrobiodiversity Initiative